



ATOP-R&D

Human Factors Newsletter # 05-08

April 23, 2005 – May 6, 2005

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Technical Note: *Human Factors Implications of UAVs in the National Airspace.* Jason S. McCarley, Christopher D. Wickens. Institute of Aviation, Aviation Human Factors Division, University of Illinois at Urbana-Champaign.

Unmanned aerial vehicles (UAVs) are quickly becoming a part of the National Airspace System (NAS) as they transition from primarily military and hobbyist applications to mainstream flight applications such as security monitoring, satellite transport, and cargo hauling. Before the full potential of UAV flight in the NAS can be realized, however, FAA standards and regulations for UAV operations must be established. Given the experience of the U.S. military that mishap rates for UAVs are several times higher than for manned aircraft (Williams, 2004)—over thirty times higher, in some cases (Department of Defense, 2001) — the importance of carefully designed standards and regulations is clear.

Issues related to human factors are likely to be of particular concern in establishing guidelines for UAV flight. As noted by Gawron (1998), UAV flight presents human factors challenges different from and in some ways greater than those of manned flight. These arise primarily from the fact that operator and aircraft are not co-located. As discussed in more detail below, the

separation of operator and vehicle imposes a number of barriers to optimum human performance, including loss of sensory cues valuable for flight control, delays in control and communications loops, and difficulty in scanning the visual environment surrounding the vehicle. Unmanned flight also allows the possibility that a single operator might control multiple vehicles simultaneously, a task likely to impose unique and heavy workload demands.

The goal of the current work was to examine the existing research literature on the human factors of unmanned flight, and to delineate issues for future research. The topics discussed are divided into categories: *Automation*; *Perceptual and Cognitive Aspects of Pilot Interface*; *Air Traffic Management Procedures*; and *Crew Qualifications*. As will be clear, however, the issues covered within the various categories are highly interrelated. Answers to questions about crew complement, for example, will be contingent on the nature and reliability of automation provided to support UAV operators. Likewise, decisions about interface design will depend on the extent to which flight control is automated, with manual flight mode demanding traditional stick-and-rudder controls, and automated flight mode allowing for point-and-click menu-based control or other forms of non-traditional interface.

It is also important to note that unmanned aircraft will likely serve a range of purposes in civilian airspace, and that the demands placed on human operators will vary with characteristics of the flight mission. Proposed uses for UAVs include agricultural, geological, and meteorological data collection; border surveillance; long distance transport; search and rescue; disaster monitoring; traffic monitoring; and telecommunications relay. Furthermore, military UAVs will increasingly be required to transition through civilian airspace en route to their missions. In some of these cases, the vehicle is likely to operate solely within line-of-sight communications range and only over relatively short periods of time (i.e., on the time scale of several hours or less). In other cases, the vehicle will operate at distances demanding over-the-horizon communications, and will potentially remain airborne for many days on end. These mission characteristics will modulate concerns about communications delays between ground control station and vehicle, and about the need for transfer of vehicle control between crews. For some applications, additionally, operators will likely be required to make frequent control inputs, adjusting flight parameters or selecting new waypoints “online” in response to changing task demands or conditions. For other applications, flight path will be predetermined and less susceptible to modification, reducing the immediacy and frequency with which operators are required to intervene in flight control and allowing for a heavier reliance on automated vehicle guidance.

This research supports the Administrator’s Flight Plan Goal for Increased Safety, Objective 2: Reduce the number of fatal accidents in general aviation.

Point of Contact: W. Krebs, ATO-P R&D

Weather Displays: William J. Hughes Technical Center personnel received acceptance for publication as follows:

Ahlstrom, U. (in press). Work Domain Analysis for Air Traffic Controller Weather Displays. *Journal of Safety Research*

Abstract. Adverse weather conditions have a major impact on National Airspace System (NAS) operations. They create safety hazards for pilots, constrain the usable airspace for air traffic

control (ATC), and reduce the overall capacity of the NAS. A system-wide dissemination of weather information to controllers could theoretically improve safety and efficiency. However, it is currently unclear what weather information would be beneficial for tactical operations. Furthermore, no previous research has empirically evaluated optimal presentation designs for ATC weather displays. Ill-designed weather displays can cause safety hazards by presenting redundant information (i.e., by increasing the cognitive load) and display clutter (e.g., by interfering with the visual extraction of traffic data). In the present paper, we outline our use of cognitive work analysis (CWA) techniques for the assessment of weather information needs for terminal controllers. Specifically, we describe how the CWA modeling tools helped us reveal instances in the terminal domain where weather information is lacking or insufficiently disseminated. We used our CWA results to drive the development of weather display concepts and to set up a high-fidelity simulation capability. By means of high-fidelity simulations, we can empirically evaluate controller weather information needs in order to propose weather displays for increased aircraft safety and efficiency of terminal operations.

This research supports the Administrator's Flight Plan Goal for Increased Safety, Objective 7: Enhance the safety of FAA's air traffic systems.

Point of Contact: U. Ahlstrom, WJHTC

Weather Displays: William J. Hughes Technical Center personnel received acceptance for publication as follows:

Ahlstrom, U. (in press). Advanced Weather Displays for TRACON Controllers. *Journal of Air Traffic Control*

Abstract. Advanced weather information at select Terminal Radar Approach Control (TRACON) facilities is only available to traffic management and supervisors for strategic use. TRACON controllers do not have direct access to these weather products. Controllers maintain their Weather Situation Awareness (WSA) by receiving weather briefings from the supervisor and by viewing precipitation levels on their workstation. The present paper provides a summary of findings from a study where researchers systematically investigated advanced weather tools and their impact on *tactical* operations in the TRACON domain. Our results showed a large impact of advanced weather information on controller efficiency, with increases in sector throughput (completed flights) of 6% to 10%. By providing enhanced weather information at the workstation, we were able to enhance controllers' ability to detect approaching weather, monitor its movement, and understand its effect on future operations. This increased controllers' efficiency for the timing of arrivals, for vectoring, for the adjustment of flow and sequencing, and for runway selection.

This research supports the Administrator's Flight Plan Goal for Increased Safety, Objective 7: Enhance the safety of FAA's air traffic systems.

Point of Contact: U. Ahlstrom, WJHTC

Weather Displays: On May 12, 2005, William J. Hughes Technical Center research psychologists from the NAS Human Factors Group will present briefings to ATEAM and ATO-E representatives on results of the Terminal Radar Approach Control Weather Simulation. The ATEAM briefing concentrates on the main results of the simulation and includes a detailed presentation of controllers' use of precipitation information and weather tools. There is also a discussion of the operational use of weather tools, with inquiries about the possibility of evaluating different presentations of traffic and weather data on the Weather Information Display System prototype. The briefing to ATO-E concentrates on possible ways to evaluate operational benefits of weather information. *This research supports the Administrator's Flight Plan Goal for Greater Capacity, Objective 1: Increase capacity to meet projected demand.* (E. Stein, WJHTC)

Quarterly Reports: The general aviation, vertical flight, and aviation maintenance FY05 second quarter reports are now available. If you want to learn more about these programs, please point to <http://www.hf.faa.gov/gafunded.htm>), <http://www.hf.faa.gov/vffunded.htm>), and <http://www.hf.faa.gov/maintfunded.htm>). (W. Krebs, ATO-P R&D)

R&D Review Now On-line: The spring issue of FAA's R&D Review is on-line at <http://research.faa.gov/newsletters.asp>. This issue features articles on:

- ADDS: The Internet's Best Source for Aviation Weather
- FAA-Sponsored Researcher Wins Award
- FAA Debuts On-Line Human Factors Training
- Supporting New International Pavement Standards

Point of Contact: T. Kraus, ATO-P R&D

Aging Controllers: An article in the April 29, 2005 *Washington Times* describes the FAA's decision to let some controllers stay on the job beyond retirement age. CAMI research on the subject is mentioned in the article. A copy of the article can be found at the end of this newsletter. *This research supports the Administrator's Flight Plan Goal for Increased Safety, Objective 7: Enhance the safety of FAA's air traffic systems.* (D. Broach, CAMI)

E-Grants Initiative: In support of the President's management agenda to expand electronic government, the FAA's aviation research grants program has begun an e-Grants initiative. Researchers may go to <http://www.grants.gov> and submit their proposals for grants and cooperative agreements electronically. They can also obtain information about what grant opportunities are available from this site. The site provides information on how to "Get Started" and how to navigate through the process. This system replaces preparing and sending of hard copy proposals through the mail. However, mailed proposals will be accepted until everyone becomes familiar with the site. (B. Fuller, WJHTC)

Cooperative Research Grant: The FAA (ATO-P R&D Human Factors) is awarding a new cooperative research grant to the University of Saint Louis: Safety Culture in Air Traffic Operations: Assessment, Intervention Development, and Transfer of Best Practices.

Project Summary:

The overall goal of this research project is to assess extant safety culture among select Air Traffic facilities, develop appropriate interventions to improve the desired safety cultural attributes, and enable transfer of best practices from the pilot sites to other sites throughout the country so as to effect a long-term change in the safety culture across the Air Traffic system.

Any organization interested in building a robust safety culture needs to have a reliable understanding of the baseline status of its safety culture prior to initiating any changes or launching any interventions. Once the baseline status is determined, subsequent measurements will allow the organization to assess the effectiveness of various interventions that may be implemented in the course of the culture change efforts. This research will be conducted over four years, eight phases. In Phase I, a safety culture survey instrument will be developed and pilot-tested at three Air Traffic facilities: St. Louis Lambert Airport Control Tower, St. Charles TRACON, and Indianapolis Center. These facilities were selected for their (a) potential for a realistic sampling of work environments and job types without having to conduct a large-scale nationwide study, and (b) proximity to the researchers to minimize travel costs. A longitudinal study—repeated measurements over a long period of time—needs to be conducted in order to determine the overall trends in the safety culture. One survey sampling will simply provide a single data point, a snap-shot, which is an important starting point, but not nearly as useful as the long-term trend report. In the overall course of this research project, a reliable measure of the safety culture throughout the Air Traffic system will be developed.

In Phase II of the research, emphasis will be on developing appropriate interventions so as to improve specific desired attributes of the safety culture within the subject Air Traffic facilities. These interventions will be geared toward building “success stories” that could be subsequently transferred to other similar facilities. Theoretically, a certain degree of scalability, transferability, and longevity are essential for any program change to be considered institutionalized. Therefore, the specific interventions developed in Phase II of this project will serve as the “test cases” of successful change programs that will need to be scaled and transferred to other organizational units. Periodic assessments of the safety culture at all partner sites will allow the researchers to measure the effects of their interventions along the longevity scale. In Phases III and IV of this research, similar methods as in Phase II will be employed to progress along the scalability dimension. As multiple organizational units are researched, an increasingly robust intervention program could be developed. Also, the emphasis—by design—on transferability of organizational changes to cause a cultural change will ensure that the interventions consider variability in implementation challenges as well as in operational environments. Ultimately, in Phase V, the goal will be to make this research and development process self-sustaining. A “train-the-trainer” paradigm could be used to develop knowledge and skills among Air Traffic staff to conduct their own assessments and develop their own interventions, with some assistance from external researchers.

Phases I & II will form the first year of this research and will produce an assessment of the extant safety culture within specific Air Traffic organizations as well as results of select interventions. Phases III through VII will expand on previous successes and facilitate the transfer of best practices across additional Air Traffic facilities, collectively improving the key attributes

of organizational safety culture. Finally, in Phase VIII, select Air Traffic employees will be trained to conduct periodic assessments, develop interventions, and measure the effects of their interventions—all on their own - so that they can be self-reliant.

This research supports the Administrator's Flight Plan Goal for Increased Safety, Objective 7: Enhance the safety of FAA's air traffic systems

Point of Contact: D. Piccione, ATO-P R&D)

Traffic Flow Management: Personnel from William J. Hughes Technical Center's NAS Human Factors Group attended the System Design Review for Traffic Flow Management - Modernization (TFM-M). One of the goals of TFM-M is to replace the existing Traffic Situation Display (TSD). The TSD is used by Traffic Management Specialists in the field for strategic planning and analysis of air traffic flows. The NAS Human Factors Group will work with the program office and the vendor to ensure that the new interface supports all existing capabilities through a well-designed interface. They will also ensure that it addresses existing usability problems. *This research supports the Administrator's Flight Plan Goal for Greater Capacity, Objective 1: Increase capacity to meet projected demand.* (E. Stein, WJHTC)

Flight Schedule Monitor: William J. Hughes Technical Center researchers attended a meeting of Traffic Management Specialists from the field to review requirements for Flight Schedule Monitor (FSM). FSM is a traffic management tool that is used in both terminal and en route Air Traffic Control facilities, and at the Air Traffic Control System Command Center. The team is evaluating whether the requirements address current needs, and will rate priorities as high, medium, or low. They will also provide input on the impact requirements may have on usability, human performance, safety, and efficiency. Representatives from the Program Office and the Metron Aviation FSM development team will also provide input. *This research supports the Administrator's Flight Plan Goal for Greater Capacity, Objective 1: Increase capacity to meet projected demand.* (E. Stein, WJHTC)

Decision-Making: The 17th annual meeting of the Oklahoma-Kansas Judgment and Decision Making Workshop (OKJDM) was held April 30th at the Oklahoma University Health Sciences Center in Oklahoma City. Attendees from Oklahoma, Kansas, Texas, California, and Pennsylvania participated, representing both academic and applied research. OKJDM provides an informal, mixed-discipline venue where those interested in judgment and decision making processes (broadly defined) can discuss emerging ideas, new theories, and ongoing research. The one-day meeting was conceived by the late Dr. Charles (Chuck) Gettys in response to increasingly larger research conferences. His "back to basics" concept is still used. The following posters and presentations were discussed at the meeting:

- *There Really Are 'I's in "Team"*. David Weiss, California State University, Los Angeles
- *"Are you sure, Doc?" Incorporating Uncertainty into Health Judgments and Choices*. Karen Kramer, University of Kansas School of Medicine – Wichita
- *Comparison of a Computer-Based, Cognitive Sciences-Driven DDX Tutor vs. Traditional Classroom-Based DDX Instruction*. Frank Papa, Texas College of Osteopathic Medicine

- *Definitive Proof for a Novel Theory of the Psychology of Marketing.* Jan Crow, Kansas State University
- *Diagnostic Hypothesis Generation and Human Judgment.* Rick Thomas, Carnegie Mellon University
- *Fuzzy-Trace Theory of Judgment and Decision Making.* Valerie Reyna, University of Texas at Arlington
- *Improving Decision Making of Experts: Four Successes and a Failure.* James Shanteau, Kansas State University
- *Neural Processes of Emotionally Influenced Decision Making.* Dan Levine, University of Texas at Arlington
- *Quality Of Life (QOL) Instruments are Recognized for Their Subjective Valuation of Health Status and will Ideally Capture Physical, Mental and Social Well-Being.* Kimberly Shinault, University of Oklahoma Health Sciences Center
- *The Eyewitness and the Lineup: Recognition vs. Recollection.* Debra Tower, University of Oklahoma, Norman
- *The Role of Inductive Reasoning Ability in Reliable Business Valuation Judgments.* Wray Bradley, University of Tulsa
- *Tumor Delineation Assessed by Multiple Users From Multiple Disciplines: Are Judgment Differences Significantly Different Than Technical Resolution?* Dee Wu, University of Oklahoma Health Sciences Center
- *An Air Traffic Control “Mental Workout” Program.* Julia Pounds, R. Breedlove, D. Thompson, D. Jack, A. Ferrante, Federal Aviation Administration, Civil Aerospace Medical Institute (FAA/CAMI)
- *Anecdote-Based Decision Making: Intentions to Comply with Warning Information.* Mitch Ricketts, Kansas State University
- *Classifying ATC Operational Errors Using the Human Factors Analysis and Classification System (HFACS).* Alfretria (Freda) Scarborough, Federal Aviation Administration, Civil Aerospace Medical Institute (FAA/CAMI)
- *Clinical Guidelines in Cardiology and Physician Decision Making.* Arthur (Andy) Coffee, Janelle Baker, Geoffrey Burnham, Deepti Sharma, Valerie Reyna, University of Texas at Arlington
- *Comparing Measures of Air Traffic Control Subject Matter Expertise.* Nelda J. Milburn, Robert A. Terry, Larry L. Bailey, Federal Aviation Administration, Civil Aerospace Medical Institute (FAA/CAMI)
- *Does Initial Training Matter in a Dynamic Environment?* Chris Barlett, Kansas State University
- *Impact of Side Effects on Immunizations Decisions.* Anne Pingenot, Kansas State University
- *Tests of the SUSPECTS Framework.* Curt Carlson, University of Oklahoma, Norman
- *The Triplet Triangulator: A Calculator that Displays a Triplet of Trilinear Coordinates as a Point in a Triangle.* Robert Hamm, University of Oklahoma Health Sciences Center
- *Exploring Qualitative Characteristics of Regret and Investment in Sunk Cost Decision Making: Which is More Salient and When?* Chris Vowels, Kansas State University

This activity supports the Administrator’s Flight Plan Goal for Increased Safety, Objectives 1, 2, 4 and 7: Reduce the commercial fatal accident rate; Reduce the number of fatal accidents in

general aviation; Reduce the risk of runway incursions; and, Enhance the safety of FAA's air traffic systems.

Point of Contact: J. Pounds, CAMI

Laboratory Tour: On May 12, 2005, personnel from the William J. Hughes Technical Center's NAS Human Factors Group will provide a tour of the laboratory and discuss research and acquisition projects with two radar systems engineers from Tinker AFB, OK. The Air Force engineers are interested in evaluating candidate display monitors for the Digital Bright Radar Indicator Tower Equipment (DBRITE) initiative. Discussions will focus on research the Human Factors Group has conducted on several tower monitors and associated computer-human interfaces. During the visit, the Air Force representatives will also receive a demonstration of the laboratory's virtual reality capability for tower design. *This research supports the Administrator's Flight Plan Goal for Increased Safety, Objective 7: Enhance the safety of FAA's air traffic systems.* (M. McAnulty, WJHTC)

Use of Color in Displays: Research Psychologists from the William J. Hughes Technical Center's NAS Human Factors Group and representatives from NASA-Ames will meet May 13-14, 2005 to prepare a conference paper on the use of color in ATC displays. In the paper, the researchers present a color palette prototype for layered data and suggest ways to improve legibility and salience manipulation. The paper has been accepted for presentation at the September 2005 Human Factors and Ergonomics Society Meeting in Orlando, Florida. *This research supports the Administrator's Flight Plan Goal for Increased Safety, Objective 7: Enhance the safety of FAA's air traffic systems. This research also supports the Administrator's Flight Plan Goal for Greater Capacity, Objective 1: Increase capacity to meet projected demand.* (E. Stein, WJHTC)

More information on human factors research can be found at the FAA Human Factors (ATOP-R&D) web site: <http://www.hf.faa.gov>

Paul Krois
FAA (ATO-P R&D Human Factors)



May 9-12, 2005 - 76th Annual Scientific Meeting of the Aerospace Medical Association, Kansas City, MO <http://www.asma.org/>

May 14-15, 2005 – 8th Alaska State Aviation Trade Show and Conference, Anchorage International Airport, Anchorage, AK <http://www.alaskaairmen.com/>

May 17-18, 2005 – Aviation Maintenance & Human Factors Workshop & Symposium, Crowne Plaza, Arlington, TX exhibitions@sae.org

May 18-20, 2005 - International Applied Reliability Symposium, Catamaran Resort on Mission Bay in San Diego, California. Symposium Theme: "Sharing applications, success stories and lessons learned in reliability and maintainability engineering." Visit the Web site <http://www.ARSymposium.org/> for detailed information on topics, presenters and registration.

You can also download the brochure at:

http://www.ARSymposium.org/2005/ars2005_brochure.pdf

May 18-20, 2005 – EBACE 2005 – 5th Anniversary, Geneva Palexpo, Geneva International Airport, Switzerland www.ebace.aero

May 23-24, 2005 – PROP Europe 2005, Frankfurt, Germany
<http://www.turbineair.com/prop.html>

May 23-26, 2005 – DoD TAG (Human Factors Engineering Technical Advisory Group), Marriott Bay Point Resort Golf and Yacht Club, Panama City, FL
<http://hfetag.dtic.mil/meetschl.html>

May 25-26, 2005 – Military Aviation Repair & Maintenance 2005, One Whitehall Place, London, UK <http://www.iqpc.co.uk/GB-2361/1010>

May 26-29, 2005 – American Psychological Society 17th Annual Convention, Westin Century Plaza Hotel, Los Angeles, CA <http://www.psychologicalscience.org/convention/>

June 2005 – 6th USA/Europe ATM Seminar, Baltimore, MD (note: call for papers deadline is January 28, 2005) <http://atmseminar.eurocontrol.fr/>

June 4, 2005 – AOPA Fly-in and Open House, Frederick, MD <http://www.aopa.org/>

June 7-9, 2005 - Europe-US International Safety Conference, Cologne, Germany, hosted by the FAA and JAA <http://www.easa.eu.int/conference2005/>.

June 13-19, 2005 - Paris Air Show 2005, Parc des expositions de Paris Nord - Le Bourget, 93350, France. www.paris-air-show.com

June 20-22, 2005 – 3rd Human System Integration Symposium, Sheraton National Hotel, Arlington, VA <http://www.navalengineers.org/Events/HSIS2005/HSIS05Index.html>

June 21-23, 2005 - Center of Excellence for General Aviation, Research Annual Meeting, University of Alaska, Fairbanks, AK. www.cgar.org.

June 27-30, 2005 – TRB 3rd International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design, Rockport, Maine

June 28-30, 2005 – AAMI Human Factors, Ergonomics, and Patient Safety for Medical Devices, Capital Hilton, Washington, DC <http://www.aami.org/meetings/hf/>

June 28-30, 2005 – Airport 2025 Conference, Washington, DC www.sskies.org

July 22-28, 2005 – HCI International 2005, 11th International Conference on Human-Computer Interaction, Caesars Palace, Las Vegas, NV hci2005@ecn.purdue.edu

July 25-31, 2005 – EAA AirVenture Oshkosh 2005, Oshkosh, WI <http://www.airventure.org>

August 15-18, 2005 - 43rd AIAA Aerospace Sciences Meeting and Exhibit, Hyatt Regency San Francisco at Embarcadero Center, San Francisco, CA <http://www.aiaa.org/>

August 18-21, 2005 - 113th Convention of the American Psychological Association, Wash, DC <http://www.apa.org/convention>

August 22-26, 2005 – SAE G-10 (Behavioral Engineering Technology Committee Meeting, Washington, DC http://forums.sae.org/access/dispatch.cgi/TEAG10_pf

September 12-16, 2005 – Interact 2005, Tenth IFIP TC13 International Conference on Human-Computer Interaction, Rome, Italy <http://www.interact2005.org/>

September 19-23, 2005 – ANA 2005 Aviation Conference and Exhibition, Connecticut Convention Center, Hartford, CN <http://www.aerospace-na.com/ace2005.asp>

September 20-21, 2005 - R,E&D Advisory Committee Meeting (joint meeting with NASA's Aerospace Research Advisory Committee), Bessie Coleman Auditorium, FAA Headquarters, Wash., DC Gloria.dunderman@faa.gov

September 21-23, 2005 - Cargo Facts 2005- 11th Annual Aircraft Symposium, Sheraton Hotel & Towers, Seattle, Washington ashoemaker@cargofacts.com

September 25-28, 2005 - 11th Ka and Broadband Communications Conference and 23rd AIAA International Communications Satellite Systems Conference 2005 (organized by IIC), Aurelia Convention Center, Rome, Italy <http://www.aiaa.org/>

September 26-28, 2005 - AIAA 5th Aviation, Technology, Integration, and Operations Forum (ATIO), Hyatt Regency Crystal City, Arlington, VA <http://www.aiaa.org/>

September 26-28, 2005 - AIAA 2nd Intelligent Systems Conference (IS), Hyatt Regency Crystal City, Arlington, VA <http://www.aiaa.org/>

September 26-30, 2005 – Human Factors and Ergonomics Society 49th Annual Meeting, Royal Pacific Resort at Universal Orlando, Orlando, FL <http://hfes.org/meetings/menu.html>

October 3-6, 2005 – SAE 2005 AeroTech Congress and Exhibition, Gaylord Texan Resort and Convention Center, Dallas/Fort Worth Airport Area, Texas <http://www.sae.org/events/conferences/aerospace/>

October 6-9, 2005 – Aviation North Expo Conference, Fairbanks Princess Riverside Lodge, Fairbanks, AK www.AviationNorth.org

October 24-25, 2005 – National Academies Institute of Medicine Annual Meeting, National Academy of Sciences, Washington, DC <http://wwwsearch.nationalacademies.org/>

October 24-26, 2005 – 43rd SAFE Symposium, Grand America Hotel, Salt Lake City, UT <http://www.safeassociation.org/symposium.htm>

October 30-November 7, 2005 – ATCA 50th Annual Conference and Exposition, Dallas, TX http://www.atca.org/event_items.asp.

October 30—November 3, 2005 – 24th Digital Avionics Systems Conference, Hyatt Regency Crystal City, Wash., DC <http://www.dasconline.org>

November, 2005 – DoD TAG (Human Factors Engineering Technical Advisory Group) Meeting, Baltimore, MD <http://hfetag.dtic.mil/meetschl.html>

November 3-5, 2005 - AOPA Expo, Tampa, Florida www.aopa.org

November 6-9, 2005 - ACI World / Pacific Conference and Exhibition, Auckland, New Zealand. www.auckland-airport.co.nz

November 7-10, 2005 – Flight Safety Foundation 58th Annual International Air Safety Seminar, Moscow, Russia http://www.flightsafety.org/iass05_cfp.html

November 8-10, 2005 – Aerospace Testing Expo, North America: Scientific Conference and Technology Forum, Long Beach Convention Center, Long Beach, CA <http://www.aerospacetesting-expo.com/northamerica/conf+forum.html>

November 10, 2005 - 34th Annual Meeting of the Society for Computers in Psychology, Toronto, Ontario, Canada <http://www.scip.ws>

November 10 - 13, 2005 - 46th Psychonomic Society Annual Meeting, Toronto, Ontario, Canada <http://www.psychonomic.org/meet.htm>

November 15-17, 2005 - National Business Aviation Association's 58th Annual Meeting & Convention, New Orleans, LA www.nbaa.org

November 16-17, 2005 – IEE Human Factors Engineering Professional Network/MoD Human Factors Integration Defense Technology Center “People and Systems Symposium: Who Are We Designing For?”, Grange City Hotel London, UK <http://conferences.iee.org/pas2005>

January 9-12, 2006 - 44th AIAA Aerospace Sciences Meeting and Exhibit, Reno Hilton, Reno, NV <http://www.aiaa.org/>

January 22-26, 2006 – TRB 85th Annual Meeting, Washington, DC <http://trb.org/calendar/>
May 14-18, 2006 - 77th Annual Scientific Meeting of the Aerospace Medical Association, Orlando, FL <http://www.asma.org/>

March 22 - 25, 2006 - Society for Behavioral Medicine Annual Meeting and Scientific Sessions, San Francisco, CA www.sbm.org/annualmeeting/index.html

March 23-25, 2006 - 17th Annual International Women in Aviation Conference, Opryland Hotel Nashville, TN <http://www.wai.org/>

April 4-10, 2006 – Sun ‘n Fun, Lakeland, FL <http://www.sun-n-fun.org/content/>

May 1-4, 2006 - 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference; 14th AIAA/ASME/AHS Adaptive Structures Conference; 7th AIAA Gossamer Spacecraft Forum; 2nd AIAA Multidisciplinary Design Optimization Specialist Conference; 1st AIAA Non-Deterministic Approaches Conference, Hyatt Regency Newport, Newport, RI <http://www.aiaa.org/>

May 25-28, 2006 – American Psychological Society 18th Annual Convention, New York Marriott Marquis, New York City, NY <http://www.psychologicalscience.org/convention/>

July, 2006 - 26th International Congress of Applied Psychology, Athens, Greece dgeorgas@dp.uoa.gr ,
http://www.erasmus.gr/dynamic/conventions.asp?conv_id=21r/dynamic/conventions.asp?conv_id=21

July 24-30, 2006 – EAA AirVenture, Oshkosh, WI <http://www.airventure.org/>

August 10-13, 2006 – American Psychological Association Annual Meeting, New Orleans, LA <http://www.apa.org/convention05/future.html>

October 23-25, 2006 – 44th Annual SAFE Symposium, Reno Hilton Hotel, Reno, NV <http://www.safeassociation.org/symposium.htm>

Note: Calendar events in Italics are new since the last Newsletter



Comments or questions regarding this newsletter?
Please contact Bill Berger at (334) 271-2928
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FAA offers waivers to aging controllers

By William Glanz

THE WASHINGTON TIMES

Published April 29, 2005

The Federal Aviation Administration is allowing some air traffic controllers to continue working beyond retirement age to guard against a wave of retirements that threatens to create a labor shortage.

A federal law in place since 1972 requires controllers hired before that date to step down when they reach 56. But a voluntary program that began April 8 lets them apply for waivers to continue working for up to five more years.

Allowing some to work beyond the mandatory retirement age is likely to renew a debate over whether it's safe to let aging controllers guide planes through the skies.

The FAA argues it is safe to let exceptional controllers remain in the work force.

"There's a strict application and assessment process based on safety. If an exceptional controller applies for a waiver, there's no good reason not to allow them to work past age 56 if they're still sharp and handle planes safely," FAA Administrator Marion Blakey said.

But the union representing controllers has warned against letting them postpone retirement and says the policy shift could make flying less safe. Older controllers have a slower response time than younger workers, said Ruth Marlin, executive vice president at the National Air Traffic Controllers Association, which represents the nation's 14,525 federal controllers.

"The FAA says this could help with the staffing constraints. Changing the rule is a matter of expedience, and that concerns us," Ms. Marlin said.

For many years, the FAA and the union agreed. During hearings in 1971, federal officials and air traffic controllers argued that stress associated with the job and evidence that controllers are less proficient in their 40s and 50s because motor skills decline made mandatory retirement at 56 prudent.

Federal officials have changed their minds since those hearings 34 years ago, and a new report published this month by a researcher at the FAA's Civil Aerospace Medical Institute in Oklahoma City calls prior research into question.

Previous studies done to support mandatory retirement at 56 "do not provide any evidence about ... what particular age, if any, controllers begin to lose proficiency. Overall, these studies are not persuasive in making the case that controllers lose proficiency with age," Dana Broach, research psychologist at the FAA, wrote in a study issued by the agency this month.

One of the union's chief concerns is the decline of a controller's cognitive skills as they age and the potential that older controllers will make decisions less quickly than younger controllers.

The FAA has support for its policy shift.

As people live longer, it makes sense to let controllers work longer, said Stuart Matthews,

president of the Flight Safety Foundation, a nonprofit research group in Alexandria promoting air safety.

"I don't have any problem increasing the retirement age," he said.

Rep. John L. Mica, Florida Republican and chairman of the House Transportation and Infrastructure aviation subcommittee, said mandatory retirement at 56 years old is an arcane rule.

"It's outdated and it's something that needed to be revised," he said.

The unprecedented wave of retirements is the result of President Reagan's 1981 decision to fire 10,438 striking controllers. The FAA hired their replacements in 1982 and 1983. Now, more than 11,000 controllers will be eligible to retire in the next decade.

Decisions to keep controllers beyond age 56 will rest with Ms. Blakey.

Controllers who volunteer to work after they reach 56 must have a clean record from the previous five years.

The policy isn't expected to help the agency solve its looming labor shortage. Up to 40 percent of retirement-age controllers are expected to request waivers, but no more than 15 percent will receive them.

To solve the shortage, the FAA needs more funding to hire more controllers, Ms. Marlin said. The agency has funding to hire 435 controllers in fiscal 2005, when 527 are eligible to retire.